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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/709,098	11/10/2000	Naoyuki Shino	81707.0164	2879

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EXAMINER

LEE, BENNY T

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 08/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N

709098

Applicant(s)

Shino et al

Examiner

B. Lee

Group Art Unit

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—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE Three (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 14 May 2002
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-18 is/are pending in the application.
- Of the above claim(s) 7-14, 18 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-6, 15-17 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Applicant Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☒ The drawing(s) filed on 10 Nov 2009 is/are objected to by the Examiner.
- ☒ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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Applicant's election without traverse of Species II, claims 1-6, 15-17 in Paper No. 6 is acknowledged.

Claims ~~7-14~~, ~~18~~ are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

Election was made without traverse in Paper No. 6.

35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: Page 2, line 6, "~~resides~~"; line 10, "~~great problem~~"; line 20, "~~once connected~~". Page ~~3~~, line 7 and page 16, line 22, "~~arousing (a)~~"; lines ~~19~~, ~~22~~, "~~(burying) treatment~~". Page 4, lines ~~13~~, ~~28~~, "~~(very) little practicable~~". Page 4, line ~~20~~ and page 9, line 25, "~~constitutions~~". Page 11, line 13, "~~owing~~" should be ~~--due--~~. Page 12, lines 5, 6, "~~by a problem of~~". Page 21, line 30, "~~needs~~" should be ~~--need--~~. Page 22, line 10, "~~through up to~~". Page 35, line ~~1~~, "~~tells~~".

The disclosure is objected to because of the following informalities: Page 1, line 18, note that ~~--field of--~~ should precede "wireless". Page 3, line 16, note that ~~--loss--~~ should precede "tangent" for a proper characterization. Page 4, line 16, note that "USP" should be rewritten as --U.S. Patent No.-- for clarity. Page 5, at all ~~occurrences~~ thereat, "said" should be rewritten as --the--. Pages ~~5~~, ~~6~~, ~~8~~, ~~10~~, ~~11~~, etc. at all occurrences that "patched" should be rewritten as --patch--. Page 6, line 4, note that the reference to "or" is vague in meaning. Page 8, lines ~~17~~, ~~23~~, note

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that for respective occurrence of "to", the inclusive drawing figures should be identified (e.g. --4b, 4c, 4d-- and --6b--); lines 27, 28, note that reference to labels (A1, B1) are unclear with respect to the context of the corresponding drawing description; line 30, similarly reference to "Experiment 2" is vague in meaning. Page 9, line 30, note that --in the prior art-- should follow "known" for clarity. Page 13, line 26 and page 14, line 1, note that --as shown in Fig. 2A-- should follow "portion" and "16", respectively for a proper characterization. Page 18, at all occurrences, note that "20,20" should be rewritten as just --20--. Page 23, lines 7-9, note that reference to "flange B" and "waveguide B1" is unclear relative to the corresponding figure description; lines 12, 13, note that reference to "cavity 26" in the corresponding drawing description is unclear; line 22, note that "staring" should correctly be --starting--. Page 24, line 21, note that reference to "Fig. 1" is vague in meaning within the context of the description; lines 31-34, note that further elaboration of what is depicted in "Fig. 7" needs to be provided. Page 25, line 14, note that --B1-- should follow "waveguide"; line 15, note that reference to "layer 18" is vague in meaning within the context of the description; lines 17, 20, note that "coplainer" should be correctly spelled as --coplaner--. Page 32, line 17, note that reference to "Fig. 6" within the context of the drawing description appears to be unclear.

Appropriate correction is required.

The disclosure is objected to because of the following informalities: Note that all labeled elements in the drawing figures should be commensurately described in the specification, especially those reference labels unique to a particular drawing figure. Moreover, like reference

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labels in different drawing figures refer to the same feature, and a statement to that effect should be provided in the detail description of the invention.

Appropriate correction is required.

The abstract of the disclosure is objected to because the form of the abstract needs to be that of a single paragraph. Also, in the 13th line, "patched" should be --^cpath-- . Correction is required. See MPEP § 608.01(b).

The drawings are objected to because of the following: Figs. 1a, 1b, 2a-2d, 4c-4e, 5, 6a, 6c, 8, note that these drawing figures need cross-hatching which is consistent for dielectric material cross-section views; In fig. 1b, reference labels (3, 4) need to be provided; In Fig. 2a, reference label --6-- needs to be provided; In fig. 2d, reference labels (7, 13a) need to be provided; In fig. 4a, reference label --1-- needs to be provided; In figs. 6a, 8, reference label --18-- needs to be provided; In fig. 6c, reference label --13a-- needs to be provided. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claims ~~2~~, 3, 15-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim ~~2~~, note that "said second dielectric layer positioned on said slot" does not appear to be a proper characterization since it appears that the second dielectric layer is disposed on the first dielectric layer.

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In claims ~~1~~⁵, ~~16~~¹⁶, ~~17~~¹⁷, note that "the opening of said connection member" appears to lack strict antecedent basis.

The following claims have been found objectionable for reasons set forth below:

In claims ~~1~~¹, ~~2~~², ~~3~~³, ~~16~~¹⁶, ~~17~~¹⁷, note that "formed" should be rewritten as --disposed-- at each occurrence.

In claims ~~1~~¹, ~~2~~², ~~3~~³, ~~5~~⁵, note that "patched" should be rewritten as --patch-- at each occurrence.

In claim ~~2~~², note that "forms" should be rewritten as --provides-- at each occurrence.

In claim ~~3~~³, note that "at a center" appears to be an incomplete recitation. Also, note that "the region" should be --a region--.

In claim ~~4~~⁴, note that "propagarting" should be correctly spelled as --propagating--.

In claim ~~5~~⁵, line 3, note that --~~W1~~^{W1}-- should follow "maximum length" and "is denoted by W1" should be deleted. Also, in lines 5, 6, --~~L1~~^{L1}-- should follow "maximum length" and "is denoted by L1" should be deleted.

In claim ~~15~~¹⁵, line 3, note that --~~which is the~~^{which is the}-- should follow "shape".

In claim ~~17~~¹⁷, note that --~~respective~~^{respective}-- should precede "outer shapes" for clarity.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

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to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koriyama et al.

Koriyama et al (figs. 15A, 15B, 16A, 16B) discloses a transition from a wiring board to a waveguide comprising a dielectric substrate (1) with a signal conductor (6) disposed on a surface thereof and a ground layer (5) on an opposite surface of substrate (1). A slot (8) is disposed in ground plane (5) to permit electromagnetic communication between signal conductor (6) and the waveguide. Disposed within the waveguide between walls (11, 12) is a dielectric layer (40) corresponding to applicants' claimed "second dielectric position" having a rectangular patch (41) disposed thereon whose size is smaller than the waveguide opening. The rectangular patch is oriented orthogonal to slot (8). The embodiment of these figures primarily differ from the claimed invention in that a "first dielectric portion" covering the slot and sandwiching the patch with the second dielectric portion is lacking.

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Note that figs. 17A-17C discloses a dielectric layer (45) arranged to cover slot (8) and such layer functions to provided for impedance matching between signal lines (6, 6a) and waveguide (13).

Accordingly, it would have been obvious to have modified the transition of the embodiments in Figs. 15A, 15B, 16A, 16B to have included the "first" dielectric portion (45) therewithin. Such modification would have provided the advantageous benefit of improved impedance matching to the transition, thereby suggesting the obviousness of such a modification. Note that as a consequence of such a modification, the dielectric portion (45) obviously would have covered slot (8) as well as sandwich patch (41) relative to dielectric (40) in the modified arrangement.

With respect to claim 3, note that alternate embodiment 22A-22C discloses the use of conductive vertical vias (71) which surround a conductive patch (77). Accordingly, it would have been further obvious to have added vertical conductive vias (71) surrounding the patch (41) of the above described combination. Such a modification would have been provided the advantageous benefit of reduced electromagnetic leakage for the modified combination, thereby suggesting the obviousness of such a modification. Furthermore, as an obvious consequence of such a modification, the vias would have passed through all dielectric portions.

With regards to claims 4-6, note that selection of slot and patch dimensions and orientations would have been considered an obvious optimization of design parameters which would have been within the purview of one of ordinary skill in the art.

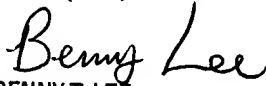
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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Scheck, Davidovitz (figs. 5A, 5B) and Pozar all pertain to transitions having a slot and patch coupling.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number (703) 308-4902.



BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817

B. Lee/mm

08/16/02